WHAT IS CLAIMED IS:

1. An isolated polynucleotide comprising:

a) a nucleotide sequence encoding a polypeptide comprising the amino acid sequence of SEQ ID NO:2;

b) a nucleotide sequence encoding a polypeptide comprising amino acid residues 72-93, 147-162, 191-211 OR 217-238 of SEQ ID NO:2;

c) a nucleotide sequence encoding a polypeptide comprising the amino acid sequence of SEQ ID NO:4;

d) a nucleotide sequence encoding a polypeptide comprising amino acid residues 55-76, 132-150, 177-199 or 213-234 of SEQ ID NO:4;

e) a nucleotide sequence encoding a polypeptide comprising the amino acid sequence of SEQ ID NO:6;

f) a nucleotide sequence encoding a polypeptide comprising amino acid residues 47-68, 123-138, 167-187 or 193-214 of SEQ ID NO:6;

g) a nucleotide sequence encoding a polypeptide comprising the amino acid sequence of SEQ ID NO:8;

h) a nucleotide sequence encoding a polypeptide comprising amino acid residues 46-67, 122-140, 166-187 or 194-213 of SEQ ID NO:8;

i) a nucleotide sequence encoding a polypeptide comprising the amino acid sequence of SEQ ID NO:9;

j) a nucleotide sequence encoding a polypeptide comprising amino acid residues 77-98, 153-167, 197-217 or 223-242 of SEQ ID NO:9;

k) nucleotides 232-1599, 445-513, 670-717, 802-864 or 880-945 of the nucleotide sequence of SEQ ID NO:1;

l) nucleotides 83-1669, 245-310, 476-532, 611-679 or 719-784 of the nucleotide sequence of SEQ ID NO:3;

m) nucleotides 247-1530, 385-450, 613-660, 745-807 or 823-888 of the nucleotide sequence of SEQ ID NO:5; or

n) nucleotides 205-1599, 340-395, 568-624, 700-765 or 784-843 of the nucleotide sequence of SEQ ID NO:7.

2. An isolated polynucleotide which hybridizes to the complement of the polynucleotide of Claim 1 under stringent hybridization conditions.

3. An isolated polynucleotide which comprises the complement of the polynucleotide of Claim 1.

4. A vector comprising the isolated polynucleotide of Claim 1 or 2.

5. An expression vector comprising the isolated polynucleotide of Claim 1 or 2.

6. A host cell genetically engineered to contain the polynucleotide of Claim 1 or 2.

7. A host cell genetically engineered to contain the polynucleotide of Claim 1 or 2 in operative association with a regulatory sequence that controls expression of the polynucleotide in the host cell.

8. An isolated polypeptide comprising:

a) the amino acid sequence of SEQ ID NO:2;

b) amino acid residues 72-93, 147-162, 191-211 OR 217-238 of SEQ ID NO:2;

c) the amino acid sequence of SEQ ID NO:4;

d) amino acid residues 55-76, 132-150, 177-199 or 213-234 of SEQ ID NO:4;

e) the amino acid sequence of SEQ ID NO:6;

f) amino acid residues 47-68, 123-138, 167-187 or 193-214 of SEQ ID NO:6;

g) the amino acid sequence of SEQ ID NO:8;

h) amino acid residues 46-67, 122-140, 166-187 or 194-213 of SEQ ID NO:8;

i) the amino acid sequence of SEQ ID NO:9; or

j) amino acid residues 77-98, 153-167, 197-217 or 223-242 of SEQ ID NO:9;

9. A composition comprising the polypeptide of Claim 8 and a carrier.

10. An antibody directed against the polypeptide of Claim 8.

11. A method for detecting a polynucleotide of Claim 1 or 2 in a sample, comprising:

a) contacting the sample with a compound that binds to and forms a complex with the polynucleotide for a period sufficient to form the complex; and

b) detecting the complex,

so that if a complex is detected, a polynucleotide of Claim 1 or 2 is detected.

12. A method for detecting a polynucleotide of Claim 1 or 2 in a sample, comprising:

a) contacting the sample under stringent hybridization conditions with nucleic acid primers that anneal to a polynucleotide of Claim 1 or 2 under such conditions; and

b) amplifying the annealed polynucleotides,

so that if a polynucleotide is amplified, a polynucleotide of Claim 1 or 2 is detected.

13. The method of Claim 12, wherein the polynucleotide is an RNA molecule that encodes a polypeptide of Claim 8, and

A DOCPHOENIX

BACKFILE DOCUMENT INDEX SHEET

APPL PARTS

_____ IMIS ____
Internal Misc. Paper

_____ LET. ____
Misc. Incoming Letter

_____ 371P ____
PCT Papers in a 371Application

_____ A... ____
Amendment Including Elections

_____ ABST ____
Abstract

_____ ADS ____
Application Data Sheet

_____ AF/D ____
Affidavit or Exhibit Received

_____ APPENDIX ____
Appendix

_____ ARTIFACT ____
Artifact

_____ BIB ____
Bib Data Sheet

_____ CLM ____
Claim

_____ COMPUTER ____
Computer Program Listing

_____ CRFL ____
All CRF Papers for Backfile

_____ DIST ____
Terminal Disclaimer Filed

_____ DRW ____
Drawings

_____ FOR ____
Foreign Reference

_____ FRPR ____
Foreign Priority Papers

_____ IDS ____
IDS Including 1449

_____ NPL ____
Non-Patent Literature

_____ OATH ____
Oath or Declaration

_____ PET. ____
Petition

_____ RETMAIL ____
Mail Returned by USPS

_____ SEQLIST ____
Sequence Listing

_____ SPEC ____
Specification

_____ SPEC NO ____
Specification Not in English

_____ TRNA ____
Transmittal New Application

OUTGOING

_____ CTMS ____
Misc. Office Action

_____ 1449 ____
Signed 1449

_____ 892 ____
892

_____ ABN ____
Abandonment

_____ APDEC ____
Board of Appeals Decision

_____ APEA ____
Examiner Answer

_____ CTAV ____
Count Advisory Action

_____ CTEQ ____
Count Ex parte Quayle

_____ CTFR ____
Count Final Rejection

_____ CTNF ____
Count Non-Final

_____ CTRS ____
Count Restriction

_____ EXIN ____
Examiner Interview

_____ M903 ____
DO/EO Acceptance

_____ M905 ____
DO/EO Missing Requirement

_____ NFDR ____
Formal Drawing Required

_____ NOA ____
Notice of Allowance

_____ PETDEC ____
Petition Decision

INCOMING

_____ AP.B ____
Appeal Brief

_____ C.AD ____
Change of Address

_____ N/AP ____
Notice of Appeal

_____ PA.. ____
Change in Power of Attorney

_____ REM ____
Applicant Remarks in Amendment

_____ XT/ ____
Extension of Time filed separate

Internal

_____ SRNT ____
Examiner Search Notes

_____ CLMPTO ____
PTO Prepared Complete Claim Set

_____ ECBOX ____
Evidence Copy Box Identification

_____ WCLM ____
Claim Worksheet

_____ WFEE ____
Fee Worksheet

File Wrapper

_____ FWCLM ____
File Wrapper Claim

_____ IIFW ____
File Wrapper Issue Information

_____ SRFW ____
File Wrapper Search Info

REV 7/02/03

ABSTRACT OF THE INVENTION

The present invention provides novel polynucleotides and proteins encoded by such polynucleotides, along with therapeutic, diagnostic and research utilities for these polynucleotides and proteins. In particular, the polypeptides and polynucleotides of the invention comprise amino acid and nucleic acid sequences of novel CD39-like gene and gene products.